1138-05-362        **Hongliang Lu**, **Yan Wang** and **Xingxing Yu\*** (`yu@math.gatech.edu`), School of Mathematics, Georgia Institute of Technology, Atlanta, GA 30332. *Minimum co-degree condition for perfect matchings in k-partite k-graphs.*

Let $H$ be a $k$-partite $k$-graph with $n$ vertices in each partition class, and let $\delta_{k-1}(H)$ denote the minimum co-degree of $H$. We characterize those $H$ with $\delta_{k-1}(H) \geq n/2$ and with no perfect matching. As a consequence we give an affirmative answer to the following question of Rödl and Ruciński: If $k$ is even or $n \not\equiv 2 \pmod 4$, does $\delta_{k-1}(H) \geq n/2$ imply that $H$ has a perfect matching? We also give an example indicating that it is not sufficient to impose this degree bound on only two types of $(k-1)$-sets. (Received February 13, 2018)